

GAKKEL', Ye. Ya.

GAKKEL', Ye. Ya., doktor tekhn. nauk (Leningrad)

Automatic control in locomotives. Zhel. dor. transp. 40 no.1:

90-92 Ja '58.

(MIRA 11:1)

(Locomotives) (Automatic control)

GAKKEL', Ye.Ya., doktor tekhn.nauk

Electric transmission of diesel locomotives equipped with
a.c. motors. Sbor.LIIZHT no.159:170-177 '58. (MIRA 12:2)
(Diesel locomotives--Electric equipment)

GAKKEL', Ye.Ya., doktor tekhn.nauk; NIKULIN, M.A., kand.tekhn.nauk

Electrodynamic braking of a diesel locomotive by using the
primary motor. Sbor.LIIZHT no.167:122-130 '59. (MIRA 13:5)
(Railroads--Brakes) (Diesel locomotives)

PHASE I BOOK EXPLOITATION SOV/5518

Gakkel', Yekaterina Yakovlevna, Doctor of Technical Sciences,
Vladimir Arsen'yevich Kozhevnikov, Engineer, Boris Georgiyevich
Kuznetsov, Engineer, Andrey Vladimirovich Lapin, Candidate of
Technical Sciences, Mikhail Andreyevich Nikulin, Candidate of
Technical Sciences, and Grigoriy Semenovich Ezrin, Engineer.

Elektricheskiye mashiny i elektrooborudovaniye teplovozov (Electric
Machines and the Electrical Equipment of Diesel-Electric Loco-
motives) Moscow, Transzheldorizdat, 1960. 218 p. 10,000 copies
printed.

Ed. (Title page): Ye. Ya. Gakkel'; Ed.: N. M. Khutoryanskiy, Candi-
date of Technical Sciences; Tech. Ed.: Ye. N. Bobrova.

PURPOSE: This textbook was approved in 1958 by GUUZ (Glavnoye
upravleniye uchebnymi zavedeniyami - Main Administration of
Schools) of the Ministry of Railroads, for use by students in
institutes of railroad transportation.

COVERAGE: The book examines the purpose, arrangement, and operation
of the elements of electrical transmission in Diesel-electric (D-E)
Card 1/8

Electric Machines (Cont.)

SOV/5518

locomotives, and in auxiliary machinery and apparatus. Information on the structure of electrical machines and apparatus and examples of their design are given. The circuits of modern Soviet D-E locomotives including the new TE10 and TE50 locomotives, are described. The circuit of the TE-3 lot-produced D-E locomotive is examined in detail. Primary materials included in the book come from the texts of courses given by teachers of the Leningradskiy institut inzhenerov zheleznodorozhnogo transporta (Leningrad Institute of Railroad Transportation Engineers), and from the Khar'kovskiy zavod "Elektrotyazhmash" (Khar'kov Heavy Electrical Machinery Plant). Chs. I and VII were written by Ye. Ya. Gakkel'; Ch. II by M. A. Nikulin and Ye. Ya. Gakkel'; Ch. III by A. V. Lapin; Ch. IV by G. S. Ezrin (sec. 7 by V. V. Strekopytov, Engineer); Ch. V by B. G. Kuznetsov (secs. 9 and 10 by Ye. Ya. Gakkel'); and Ch. VI by V. A. Kozhevnikov. The authors thank A. Ye. Alekseyev, Corresponding Member, AS USSR, K. I. Rudaya, Candidate of Technical Sciences, and A. D. Stepanov, Doctor of Technical Sciences, for their advice, and Ye. F. Kholmovskaya and I. F. Pushkarev, Engineers, and A. N. Korotkova, Laboratory Assistant, who helped with the manuscript. There are 29 references, all Soviet.

Card 2/8

SHISHKIN, K.A., prof. [deceased]; DOMBROVSKIY, A.B., dotsent;
TRET'YAKOV, A.P., dotsent; SOLOMENNikov, V.A., dotsent;
BOGOYAVLENSKIY, V.N., dotsent; STEPANOV, A.D., doktor tekhn.
nauk; IVAKOV, V.N., prof.; KUZNETSOV, N.V., kand.tekhn.nauk;
SLITIKOV, P.A., prof., doktor tekhn.nauk, retsenzent; GAKKEL',
Ye.Ye., dotsent, doktor tekhn.nauk, retsenzent; PANSKIY, V.M.,
dotsent, kand.tekhn.nauk, retsenzent; LUGININ, N.O., kand.tekhn.
nauk, red.; KHITROV, P.A., tekhn.red.

[Diesel locomotives] Teplovozy. Moskva, Vses.izdatel'sko-poligr.
ob'edinenie M-va putei soobshchenia, 1960. 340 p.

(MIRA 14:1)

1. Leningradskiy ordena Lenina institut inzhenerov zheleznodorozhno-
go transporta im. akademika V.N.Obratzsova (for Slitikov, Gakkel',
Panskiy).

(Diesel locomotives)

BOBKOV, Vasiliy Andreyevich; MARKOV, Vladimir Petrovich; GAKKEL', Ye.Ya., dok.tekhn.
nauk, nauch.red.; VOROB'YEV, G.S., red. izd-va; GURDZHIYEVA, A.M., tekhn.
red.

[Railroad transportation in the seven-year plan] Zheleznodorozhnyi
transport v semiletнем plane. Leningrad, Ob-vo po raspr. polit. i
nauchn. znaniy RSFSR, 1961. 43 p. (MIRA 14:8)
(Railroads)

TIMOFEYEV, Vladimir Andreyevich, prof., doktor tekhn.nauk;
MORDOVIN, B.M., prof., retsenzent; RYABININ, I.A.,
dots., kand. tekhn. nauk, inzh.-kapitan III ranga,
retsenzent; GAKKEL', Ye.Ya., doktor tekhn. nauk, prof.,
retsenzent; ARANOVICH, B.I., dots., kand. tekhn. nauk,
retsenzent; GORBENKO, B.M., st. prepodavatel', retsenzent;
GEKTOR, D.S., retsenzent; VOL'PE, L., red.

[Fundamentals of the theory of automatic control] Osnovy
teorii avtomaticheskogo regulirovaniia; uchebnoe posobie.
Leningrad, Severo-Zapadnyi zaachnyi politekhnicheskii in-t.
No.2. 1962. 195 p. (MIRA 17:1)

1. Voenno-morskaya akademiya korablestroyeniya i vooruzhe-
niya imeni A.N.Krylova (for Mordovin, Ryabinin).


S/196/62/000/004/018/023
E194/E155

AUTHOR: Gakkel', Ye.Ya.

TITLE: Modern trends in the development of automatic control systems for diesel-electric locomotives

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika, no.4, 1962, 5, abstract 4 L20. (Sb. tr. Leningr. in-t inzh. zh.-d. transp., no.175, 1961, 3-9)

TEXT: The type of diesel engine governs the main power characteristic and output of a diesel-electric locomotive and the generator shaft speed. The useful output of the locomotive depends mainly on the quality of the electrical machines, on their method of connection and on their control systems. With electrical transmission the diesel engine is kept fully loaded by altering the voltage of the main generator in inverse proportion to the load current of the traction motors. The external characteristic of the generator, corresponding to the condition $U_I \approx \text{idem}$, can be obtained by applying negative feedback according to load current to its field system.




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Modern trends in the development...

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A three-winding generator is best with this control system. A hyperbolic external characteristic is given by using a split-pole generator to excite the main generator. It is also possible to use multi-winding amplidynes. The automatic control system should ensure extreme conditions for all components of the power circuit. The automatic system in which the exciter is a split-pole generator does not satisfy the requirement of maintaining the diesel load constant over a wide range of change of power circuit parameters of the locomotive and does not ensure cut-off according to generator voltage and current. Current limitation on locomotive type ТЗ-3 (TE-3) is far from ideal. The requirements are much better met if an amplidyne is used as exciter. The current is limited most simply in the three-winding generator system. Cut-off is carried out in a special way in systems like that used in locomotive ТЗ-10 (TE-10), using a synchronous alternator as exciter. Signals corresponding to current and to voltage picked up by a magnetic amplifier are delivered to the main control winding through rectifier bridges.



Card 2/3

Modern trends in the development ... S/196/62/000/004/018/023
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The nodes of the signal circuit are tuned in such a way that when the current value is maximum the voltage circuit is blocked and when the voltage is high the current circuit is blocked. For intermediate values of voltage and current, signals corresponding to both parameters operate. The resulting characteristic is nearly ideal. Exploratory investigations are being carried out on the development of an automatic driver for diesel-electric locomotives. 5 figures, 9 lit.refs.

[Abstractor's note: Complete translation.]

Card 3/3

PINKHENSON, Dmitriy Moiseyevich, kand. geogr. nauk, dots.; GAKKEL',
Ya.Ya., doktor geogr. nauk, prof., red.; CHERNENKO, M.B.,
red.; FRISHMAN, Z.S., red.izd-va; KOTLYAKOVA, O.I., tekhn.
red.

[History of the discovery and adoption of the Northeast Pas-
sage] Istoriia otkrytiia i osvoeniia Severnogo morskogo puti.
Leningrad, Izd-vo "Morskoi transport." Vol.2. [Northeast Pas-
sage in the period of capitalism] Problema Severnogo morskogo
puti v epokhu kapitalizma. Pod red. IA.IA.Gakkelia, M.B.
Chernenko. 1962. 765 p. (MIRA 17:3)

1. Leningrad. Arkticheskiy nauchno-issledovatel'skiy institut.
2. Deystvitel'nyy chlen Geograficheskogo obshchestva SSSR (for
Chernenko)

GAKKEL', Ye.Ya., doktor tekhn. nauk, prof. (Leningrad)

Permissibility of the occurrence of "Counter currents" on
deisel locomotives. Elek. i tepl. tiaga 7 no.9:39-40 S '63.
(MIRA 16:10)

GAKLIN, D., inzh., zvukorezhisser

Lenin's voice remains with us. Radio no.4:4-5 Ap '65. (MIRA 18:5)

1. Gosudarstvennyy dom radioveshchaniya i zvukozapisi.

GAKLIN, I.

Concrete reinforced with cables. Na stroi. Ros. no.7:11-12 J1 '61.

1. Direktor Tsentral'noy nauchno-issledovatel'skoy laboratorii po
stroitel'stvu i stroitel'nym materialam Novosibirskogo sovnarkhoza.
(Concrete reinforcement)

AUTHOR: Gaklin, I.S., Engineer

SOV/97-58-9-4/13

TITLE: Use of Twisted Two-thread Cables for Pre-stressed Reinforced Concrete Constructions (Primeneniye vitykh dvukhpriyadnykh kanatov dlya armirovaniya predvaritel'no napryazhennykh zhelezobetonnykh konstruktsiy)

PERIODICAL: Beton i Zhelezobeton, 1958, Nr 9, pp 336 - 340 (USSR)

ABSTRACT: The advantage of pre-stressed reinforced concrete constructions is that high-tensile steel can be used resulting in economies in steel consumption. The economy increases with higher strengths of steel, smaller diameter of wires and higher number of wires. These economies could be achieved by using cable reinforcement. The problem of adhesion of this new type of reinforcement with the concrete is investigated. Adhesion depends on two factors: 1) the relative area of meshing of the reinforcing material with the concrete and 2) the relative perimeter of the material (up to the line of contact with the concrete). These factors are tabulated against the number of coils of wire for different forms of reinforcement. It is concluded that better adhesion is obtained if the cable is formed from two threads, each of which consists of two smaller threads. In 1956 tests

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SOV/97-58-9-4/13

Use of Twisted Two-thread Cables for Pre-stressed Reinforced Concrete Constructions

were carried out with these reinforcing cables in Novosibirsk Trust Nr 43 and also in the Tsentral'naya nauchno-issledovatel'skaya laboratoriya upravleniya stroitel'stva i promyshlennosti stroitel'nykh materialov (Central Scientific and Research Laboratory of the Building Directorate and Building Materials Industry), Novosibirsk under the leadership of Professor P.L. Pasternak. Figure 3 illustrates a machine for twisting threads into cables and Table 3 gives values for cables made from high-tensile cold-rolled reinforcement of 2.5 mm diameter (GOST 7348-55). Figure 4 illustrates details of anchoring cone used for this reinforcement and Table 4 gives dimensions of this anchor. Figure 5 illustrates the way of testing beam reinforced with ten two-thread cables. On the basis of tests carried out production commenced on pre-stressed reinforced 'I'-section beams 6 m long; reinforcement used in these beams is illustrated in Figure 6. In 1957, these beams were used for roofs of the Trust Nr 43 in Novosibirsk (Figure 7). Two pre-stressed reinforced concrete beams spanning 15 m for roofs of industrial buildings were

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Use of Twisted Two-thread Cables for Pre-stressed Reinforced
Concrete Constructions

cast and tested. These beams are used in schemes where the stanchions are 6 m apart and the loading 380 kg/m². To speed up tests, the beams were cast in forms used for beams NII-200. Details of the beam are illustrated in Figure 8. The tensioned reinforcement consisted of two threads, each of thirty wires. By the use of steel with strength of 20 000 kg/cm², a considerable saving of steel was achieved (Figure 5). Values of the strength of concrete in the reinforcement of beams spanning 15 ft are given in Table 6. Test of beam B-1 was carried out twelve days after casting and of beam B-2 fifty-three days after casting. Method of testing these beams is illustrated in Figure 9. The load was 100 tons applied by hydraulic jacks. The beam B-1 collapsed under the moment of 128.9 tm and beam B-2 under the moment of 134.9 tm which corresponds with the safety coefficient of 2.21 and 2.23, respectively. Figure 10 illustrates graph of deflections of beam B-2 subjected to first loading. During the third phase of loading,

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Use of Twisted Two-thread Cables for Pre-stressed Reinforced
Concrete Constructions

which was the crushing load, the cracks in the beam widened
and their number increased (see Figure 11).
There are 11 figures and 6 tables.

Card 4/4

GAKLIN, I. S., Cand Tech Sci -- (diss) "Rational construction of spiral high-strength armatures. (Research into pre-stressed reinforced concrete elements and armored rope)." Novosibirsk, 1960. 21 pp; (Academy of Construction and Architecture USSR, Scientific Research Inst of Concrete and Reinforced Concrete -- NIIZhB); 150 copies; price not given; (KL, 18-60, 151)

GAKLIN, I.S., inzh.

Using prestressed concrete construction elements reinforced with
double-stranded ropes. Bet.i zhel.-bet. no.7:303-306 J1 '60.
(MIRA 13:7)

(Prestressed concrete)

(Wire rope)

GAKLIN, R. I., and SHERSTOPOYEV, K. N.

(Irkutsk Scientific Research Veterinary Experimental Station)

Prophylaxis of paratyphoid abortion in mares with bacteriophage.

SO: Veterinariya 23; 5-6; May/June 1946.

GAKLIN, R. I., and SHERSTOBYEV, K. N.

"Aujesky's Disease." Veterinaria 25(12), 1948. p. 19.

Aladar Aujesky, contemporary Hungarian Physician; - his disease, pseudohydrophobia; pseudorabies; an infectious (virus) bulbar paralysis of cattle, horses and other domestic animals, first observed in Hungary and Brazil, where it is called the "scratching pest."

(SO: Amer. Illust. Med. Dictionary - Dorland)

GLIKMAN, L.A.; BOGORAD, L.Ya.; SUPRUN, L.A.; GAKMAN, E.L.; ZHUKOVA, V.I.,
inzh.; red.; FREGHER, A., tekhn.red.

[The effect of chrome plating on fatigue and corrosion resistance
of steel] Vliianie khromirovaniia na ustalostnuiu i korrozionno-
ustalostnuiu prachnost' stali. Leningrad, 1955. 9 p. (Leningradskii
dom nauchno-tekhnikeskoi propagandy. Informatsionno-tekhnikeskii
listok, no.84(772)) (MIRA 10:12)

(Chromium plating)

~~GAKMAN, Emma Lvovna~~; RAGAZINA, M.F., inzhener, vedushchiy redaktor;
SHREYDER, A.V., kandidat tekhnicheskikh nauk, redaktor; PONOMAREV,
V.A., tekhnicheskiiy redaktor

[Zinc plating of parts] Diffuzionnoe tsinkovanie detalei. Moskva,
Akad.nauk SSSR, 1956. 15 p. (Informatsiya o nauchno-issledovatel'-
skikh rabotakh. Tema 24, no.1-56-207) (MLRA 10:10)
(Zinc plating)

GAKMAN, E. L.

137-58-1-1395

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 1, p 186 (USSR)

AUTHORS: Glikman, L. A., Suprun, L. A., Bogorad, L. Ya., Gakman, E. L.

TITLE: Effect of Chromium Plating on the Fatigue and Corrosion
Fatigue Strengths of Steel (Vliyaniye khromirovaniya na usta-
lostnuyu i korroziionnoustalostnuyu prochnost' stali)

PERIODICAL: Tr. Tsent. n.-i. in-ta morsk. flota, 1956, Nr 5, pp 36-42

ABSTRACT: The results of an investigation of the effects of the chromium plating procedure employed upon the fatigue strength (FS) and the fatigue corrosion strength (FCS) of specimens of Nr 35 carbon steel subjected to heat treatment are presented. When tested for FCS the midsection of the specimen was in a flowing liquid medium (3% NaCl). Seven chromium platings, differing as to plating procedure and the condition of the Cr coating, were tested. The chromium plating (C) of all the specimens was performed in a bath with an electrolyte of identical composition (in g/l): CrO_3 150, H_2SO_4 1.5. It was found that C differs in its effect upon FS when tested in air, depending on the plating procedure. For specimens coated with bright and cloudy Cr, significant diminution in the FS of the parent metals was found,

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Effect of Chromium Plating on the (cont.)

which is explained by the presence in the coating of residual tensile stresses, and the positive effect of tempering at 550-600°C was confirmed, as it restored the FS almost completely. In porous chromium plating, no reduction in FS was revealed, and this is explained by the significantly diminished magnitude (due to general development of a network of cracks) of residual tensile stresses in such coating. Corrosion fatigue tests showed that C provides unsatisfactory protection against reduced FS of steel under conditions of corrosion. Tempering after C has virtually no effect on the FCS of steel: all tests revealed a comparatively small difference between the curves for corrosion fatigue of C and of non-chromium-plated specimens. A strict relationship between the corrosion strength and the number of cycles was found to exist in both categories. The use of a supplementary 2-layer Ni and Cu coating beneath the Cr does not improve the protective properties of the coating. A significant improvement in the protection against reduction in FS against corrosion of specimens covered by bright Cr was attained only with a preliminary two-hour heating of the chromium-plated specimens in flaxseed oil at 140-150°. In the opinion of the authors, the unfavorable effect of Cr coatings upon the FCS of steel is explained by the appearance of cracks in the coating under cyclic loads, these cracks serving as channels leading the corrosive medium to the parent metal.

Card 2/2

L. U.

1. Steel--Fatigue 2. Steel--Corrosion 3. Chromium plating--Effects

GAKMAN, L. L.

PHASE I BOOK EXPLOITATION

SOV/3993

Bogorad, Isaak Yakovlevich, Lev Yakovlevich Bogorad, and Emma L'vovna Gakman

Povysheniye zashchitnoy sposobnosti blestyashchikh khromovykh pokrytiy
(Improving the Protective Properties of Bright Chromium Coatings) Leningrad,
1959. 25 p. (Series: Leningrad. Dom nauchno-tekhnicheskoy propagandy.
Obmen peredovym opytom. Seriya: Zashchitnyye pokrytiya metallov, vyp. 3)
3,500 copies printed.

Sponsoring Agencies: Leningrad. Dom nauchno-tekhnicheskoy propagandy, and
Obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy RSFSR.

Ed.: N.V. Akatova; Tech. Ed.: M.M. Kubneva.

PURPOSE: This booklet is intended for technical personnel specializing in the
protective and decorative plating of machine parts.

COVERAGE: The booklet deals with a method of single-layer chrome plating of ma-
chine parts. The advantages of this type of plating over multilayer plating

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Improving the Protective Properties (Cont.)

SOV/3993

with Ni-Cu-Cr or with Cu-Ni-Cr are indicated. The inherent porosity of single-layer chrome plating is also indicated. A description is given of attempts to reduce porosity by immersing plated parts in linseed oil and other filler media to fill the pores and voids in the chromium coat by capillary action. The testing of treated parts for corrosion, wear, and fungus resistance is also described. The authors conclude that single-layer chrome plating treated with linseed oil, BF-2 glue, and ASM-3 lubricant has the same protective characteristics as a four-layer coat of Ni-Cu-Ni-Cr and shows good wear-resistance properties. The experiments and results are tabulated, and microphotographs are presented. Work on this problem was done by the Leningrad Branch, VPTI, the Zavod imeni Lenina (Plant imeni Lenin), and other scientific research institutes. No personalities are mentioned. There are 3 references, all Soviet.

TABLE OF CONTENTS: None given.

AVAILABLE: Library of Congress

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AK/pw/gmp
7-28-60

L 51478-65 EWP(s)/EPR/EPA(s)-2/ENG(v)/EPA(w)-2/EWA(h)/EWP(j)/EWP(z)/EWT(m)/EWP(c)/
EPP(c)/EPP(n)-2/EPA(bb)-2/EWP(b)/T/EWA(d)/EWA(l)/EWP(e) Pc-4/Pe-5/Pr-4/Ps-4/Pt-7/
Pab-10/Pea IJP(c) RM/WH/WH/JD/JG/WB

AM5015766

BOOK EXPLOITATION

669.14.018.45(083)

Shchedrov, K. P.; Gakman, E. L.

Heat-resistant materials; a handbook (Zharostoykiye materialy; spravochnoye posobiye) Moscow, Izd-vo "Mashinostroyeniye," 1965. 166 p. illus., biblic., tables. 7800 copies printed.

TOPIC TAGS: oxidation, oxidation resistant material, heat resistant material, metal oxidation, nonmetallic material oxidation, metallic coating, nonmetallic coating.

PURPOSE AND COVERAGE: This book is intended for engineering personnel dealing with problems connected with tests and use of oxidation-resistant materials. It may also be useful to workers in plants and laboratories. Data on the physical, chemical, and technological properties of steels, special alloys, and cast irons are systematized and presented. Characteristics and properties of nonmetallic materials such as cermets and plastics are reviewed along with methods of their fabrication. The book also contains information on oxidation- and heat-resistant coatings.

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SUB CODE: MM, MT

SUBMITTED: 06Jan65

NO REF SOV: 075

OTHER: 017

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GAKOVIC, Miodrag

The Lower Cretaceous sediments in the area of the Mala Cvrnica Mountain. Geol glas BiH 9:55-58 '64.

GAL, Andrash

Liberation of Budapest. Voen.znan. 36 no.2:13-14 P '60.
(MIRA 13:1)

1. Zaveduyushchiy otdelom mezhdunarodnoy shizni gazety
"Nepkhadshereg" organa Ministerstva oborony Vengerskoy Narodnoy
Respubliki.
(Budapest--World War, 1939-1945)

KHEGEDYUSH, Ferents [Hegedus, Ferenc]; GAL, Andrash [Gal, Andras]; FOMIN,
V., mayor [translator]

Hungarian pilots start. Av.i kosm. 45 no.8:86-87 '62.
(Hungary--Air pilots) (MIRA 15:8)

GAL, Gy.

GAL, Gy., UNKID, C. SCIENT, I.

Detection of *p*-nitrobenzoic acid-*B*-diethylaminoethyl esters in the presence of novocaine. p. 321. (MAGYAR KEMIAI FOLYVIRT). Vol. 50, No. 11, Nov. 1954. (Budapest, Hungary)

SO: Monthly List of East European Accessories, (EEAL) LC, Vol. 4, No. 5, May 1955, Uncl.

GAL, D.

Hungary (USSR)/Medicine - Transplantation of Arteries

Oct 53

"Preservation and transplantation of Arteries," L. Sin, D. Barci, D. Gal,
E. Ormcs, Surgical Clinic and Inst of Pathol, Szeged U

Khirurg, No. 10, pp 70-75

Describes the procedure and histological aspects of aorta transplantation in animals. The tissues were preserved in a mixt similar to Tirode's soln and contg glucose, 10% of plasma, and buffer compds. Retrograde arteriograms of the 9 survivors from the 26 animals used in the expt showed a complete adjustment of the transplant. Similar transplants were made in humans. Human tissues were removed from persons who died from non-septic or non-malignant causes, and preserved for as long as 75 days. In human transplants, the solution for preserving was the same as described above but the blood plasma used for preservation matched the blood type of the donor. Authors advised that further research is in progress in this field. They suggest that every large medical institution keep a supply of preserved material, and have a staff qualified to perform transplantations.

GAL, D., Szabo, Z.

Research on the kinetics of the oxidation of hydrocarbons. I. General remarks; experimental methods. II. Noncatalytic oxidation of ethane. III. Effect of water and iodine on the oxidation of ethane. IV. Effect of methylamine and nitrogen dioxide on the oxidation of ethylene. VI. Effect of homogeneous catalyzers on the oxidation of ethylene. V. Non-catalytic oxidation of ethylene. VII. Oxidation of acetylene and the effect of homogeneous catalyzers on the oxidation. P. 379.

Kozléményi

MAGYAR TUDOMÁNYOS AKADEMIA VOL. 7 no. 3/4 1955

Budapest, Hungary

So. EAST EUROPEAN ACCESSIONS LIST VOL. 5, no. 8, July 1956.

Gal, D.

Chemistry of explosion limits of gas mixtures. Gal.
(Univ. Szeged). Acta Chim. Acad. Sci. Hung. 8:101-113, 1965 (in English). The decomp. process of the 1st
pressure limit is the diffusion towards the wall and the de-
struction occurring there. The 2nd pressure limit can be
divided into 2 sections. In the initial section the decomp. re-
actions are the diffusion towards the wall and the destruc-
tion in double collision, in space. The latter is in connection
with an energy step. At the middle and final sections the
role of the former is progressively taken over by the break-
down occurring in 3-body collisions, and at the wall, the
so-called 3-body destruction. The processes determining the 3rd
limit are: a reaction proceeding as a 3-body collision (pos-
sibly the same as the one along the 2nd limit) and the break-
down or reaction of the formed radical, atom, and mol.,
resp. This reaction mechanism may not only interpret the
phenomena explained by the former mechanism but it may
afford a qual. explanation for other facts contradicting the
latter, such as, e.g., the insignificant dependence of the 2nd
pressure limit on the wall, its dependence on the percentage
of compn., interpretation of the low pressure and temp.
range of 2nd pressure limit; the dependence on the wall of
the 3rd chain limit; the occurrence of glow limit. By the ap-
plication of the mechanism to 4 reactions, the oxidation of
H₂, CO, H₂S, and P, evidence is furnished to the effect that
the assumed processes conform to the facts. F. R. 3.

GAL, D.

Notes on the chemism^{ty} of pressure limits during self-ignition of gaseous mixtures.
p. 198. Vol 61, no.7, July 1955. ~~ACTA ZOOLOGICA, ZEP ES TUDOMANY~~ and MAGYAR KEMIAI
FOLYOIRAT. Budapest, Hungary.

So: Eastern European Accession, Vol 5, no. 4, April 1956

HUNGARY / Physical Chemistry. Kinetics. Combustion. B
Explosions. Topochemistry. Catalysis.

Abs Jour: Ref Zhur-Khimiya, No 17, 1958, 56758.

Author : Szabo Zoltan, ~~Gal Dezso~~

Inst : Magyar Tud. Akad.

Title : The Kinetics of Hydrocarbon Oxidation. V. Un-
catalized Ethylene Oxidation. VI. The Action of
Homogeneous Catalyzers on the Oxidation of Ethyl-
ene. VII. The Oxidation of Acetylene and the
Action of Homogeneous Catalyzers.

Orig Pub: Kem tud. oszt. kozl., 1956, 7, No 3 -4, 435-
445; 447 - 458; 459 - 465.

Abstract: V. In contrast to the oxidation of C_2H_6
(RZhKh, 1958, 49614), no distinction was noted
in the reaction kinetics, by varying the O_2 con-
centration in the initial mixture, at the oxid-

Card 1/4

HUNGARY / Physical Chemistry. Kinetics. Combustion. Explosions. Topochemistry. Catalysis. B

Abs Jour: Ref Zhur-Khimiya, No 17, 1958, 56758.

Abstract: mental data with additions of I_2 can be expressed by the formula calculated on the assumption that I_2 affects P only, and not the appearance rate of active centers. Methylamine exerts an inhibiting action at pressures < 0.47 millimeters of the mercury column, and a catalyzing one at $0.5 - 14.5$ millimeters of the mercury column. A similar double action can be observed at different concentrations of NO_2 . The authors have come to the conclusion that, as in the case of C_2H_6 , it is not only CH_3NH_2 which reacts, but rather NO , generated by its oxidation process.

VII. The variation of the general pressure of the mixture $C_2H_2-O_2$ from 173 to 215 millimeters

Card 3/4

HUNGARY / Physical Chemistry. Kinetics. Combustion. Explosions. Topochemistry. Catalysis. B

Abs Jour: Ref Zhur-Khimiya, No 17, 1958, 56758.

Abstract: of the mercury column brings about a considerable increase in the rate and intensity of the reaction at $377^\circ C$ in the container covered with Na_3PO_4 . The rate of reaction also depends on the admission rate of the mixture into the reaction vessel. The water inhibits the reaction. The additions of $NO_2 < 0.02$ millimeters of the mercury column catalyze, and the large quantities of NO_2 retard the oxidation of C_2H_2 .

For part IV, see RZhKh, 1958, 52980.

Card 4/4

CH, D.; SIV, A.

Investigation of the kinetics of the oxidation of carbohydrates. VIII. Some remarks on the problem of the inductive periods and the periodicity processes of oxidation. IX. Conditions of the transition of degenerated explosion into a real explosion. X. Formal Kinetical analysis and mechanism of cold flames.

P. 311 (KOZLEMENYEI) Budapest Vol. 8, No. 2/3, 1957.

SO: Monthly Index of East European Accessions (AMEI) Vol. 6, No. 11 November 1957.

GAL, D.; GALIPA, I.; SZABO, Z.

Slow and cold flame oxidation of acetaldehyde and effect of ethane on this oxidation.

P. 335 (KOZISEMENYEI) Budapest Vol. 8, No. 2/3, 1957.

SO: Monthly Index of East European Accessions (AEEI) Vol. 6, No. 11 November 1957.

HUNGARY/Physical Chemistry. Kinetics. Combustion. Explosions. D
Topochemistry. Catalysis.

Abs Jour: Ref Zhur-Khin., No 15, 1958, 49614.

Author : Szabo Z. G. & Gal D.
Inst : Hungarian Academy of Sciences.
Title : On the Kinetics of the Oxidation of Hydrocarbons. I.
General Remarks. Experimental Technique. II. The
Non-Catalyzed Oxidation of Ethane.

Orig Pub: Acta chim. Acad. sci. hung., 1957, 10, No 4, 387-394;
395-411; Magyar tud. akad. Kem. tud. oszt. kozl.,
1956, 7, No 3-4, 379-386, 387-403.

Abstract: I. Introduction and description of experimental pro-
cedures. II. The rate of oxidation of C_2H_6 at 462-
484° and pressure of 244-366 mm Hg, in absence of
catalyst, was measured on the basis of pressure change

Card : 1/3.

HUNGARY/Physical Chemistry. Kinetics. Combustion. Explosions. D
Topochemistry. Catalysis.

Abs Jour: Ref Zhur-Khin., No 15, 1958, 49614.

consider that the mechanism of the process of oxidation of C_2H_6 is different with high and low $[O_2]$.
-- Z. Mayzus.

Card : 3/3

GAL, D , Szabo, Z.

On the kinetics of the oxidation of hydrocarbons. III. Effect of water and iodine on the oxidation of ethane. IV. Effect of methylamine and nitrogen dioxide on the oxidation of ethane. V. The non-catalytic oxidation of ethylene. VI. Effect of homogeneous catalysts on the oxidation of ethylene. VII. Oxidation of acetylene and the effect of homogeneous catalysts on the oxidation. In English. p. 205.
(ACTA CHIMICA. Vol. 11, no. 3/4, 1957. Hungary.)

SO: Monthly List of East European Accessions (EEAL) LC. Vol. 6, no. 12, Dec. 1957.
Uncl.

GAL, D'YERD', Cand Med Sci -- (diss) "Organization of medicosanitary
~~care of~~
~~services for~~ industrial workers." [Mos, 1958]. 16 pp (1st Mos Order of
Lenin Med Inst im I. M. Sechenov), 200 copies (KL, 17-58, 111)

-79-

Gal, D.

HUNGARY/Physical Chemistry - Kinetics. Combustion. B-9
Explosions. Topochemistry. Catalysis

Abs Jour: Referat Zhur - Khim, No. 9, 1959, 30507

Author : Gal, D., Szabo, Z.G.

Inst : Hungarian Academy of Sciences

Title : On the Kinetics of the Oxidation of Hydrocarbons.
IX. Conditions for the Transition of Degenerated
Explosions to Real Explosions. X. Formal Kinetic
Study and Mechanism of Cold Flame Propagation.

Orig Pub: Acta Chim Acad Sci Hung, No 1, 1958, 21-28;
Magyar Tud Akad Kem Tud Oszt Koezl, 1958, No 2-3,
317-323; Acta Chim Acad Sci Hung, 1958, No 1,
29-38.

Abstract: IX. It has been shown that in the region of low-
temperature oxidation of hydrocarbons the degene-
rated-to real explosion transition / deflagration-

Card 1/5

HUNGARY/Physical Chemistry - Kinetics. Combustion. B-9
Explosions. Topochemistry. Catalysis

Abs Jour: Referat Zhur - Khim, No. 9, 1959, 30507

to-detonation transition γ does not take place under purely thermal regime. It is assumed that the course of the reaction is determined by a change in the value of the branching factor φ . In the opinion of the authors the relation $w_c = A \exp(\varphi t)$ (1) (N. N. Semenov, Tsepny'e Reaktsii / Chemical Kinetics and Chain Reactions, Oxford 1935) and the relation, derived from it $\gamma_{\max} = \text{const}$ (2), where w_c is the critical velocity at which the transition to detonation takes place and γ_{\max} is the time required for the attainment of w_{\max} . P_0 is the initial pressure; in addition, $\varphi = C P_0^x \exp(-E_\varphi / RT)$, $\gamma_{\max} = C P_0^{-x} \exp(E_\gamma / RT)$, is a sufficient condition for detonation only for the case when $x \approx y$ (3) and $E_\varphi \approx E_\gamma$ (4). If conditions (3) and (4) are not met, then the

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HUNGARY/Physical Chemistry - Kinetics. Combustion. B-9
Explosions. Topochemistry. Catalysis

Abs Jour: Referat Zhur - Khim, No. 9, 1959, 30507

condition for detonation consists of the ensemble of (1), (2), and $|E_{\sim}| \geq |E_y|$ and $x \geq y$ (or $|E_y| \leq |E_{\sim}|$ and $x \leq y$). The authors discuss a number of examples drawn from their own researches published in earlier communications. X. A critical discussion is given of a large number of experimental results obtained in the study of the kinetics of the cold-flame oxidation of hydrocarbons (H), particularly of CH_3CHO (I), and it is shown that all current concepts on the nature of cold flames (CF) are inadequate for the explanation of the experimental material. The following mechanism is proposed for the initiation of CF: when the concentration of the I formed in the course of the oxidation reaches a critical value $[I]_c$ corresponding to the boundary of the region of cold-flame defla-

Card 3/5

HUNGARY/Physical Chemistry - Kinetics. Combustion. B-9
Explosions. Topochemistry. Catalysis

Abs Jour: Referat Zhur - Khim, No. 9, 1959, 30507

gration (CFD) of I itself at the given temperature and for the H concentration used (since the addition of H shifts the CFD limit), a CF spike will be observed to appear on the kinetic curve for the oxidation of the H. The formation of the spike is accompanied by the following reactions: $2\text{I} \rightarrow \text{CH}_3\text{CH}_2\text{O}$ (II) + CH_3CO (III); $\text{III} + \text{O}_2 \rightarrow \text{CH}_2\text{O} + \text{OH} + \text{CO}$; $\text{II} + \text{OH} \rightarrow \text{CH}_3\text{OH} + \text{CH}_2\text{O}$. The above sequence of reactions leads to a decrease in the concentration of I below $[I]_c$ and the CF disappears. The cycle is repeated until the concentration of the unconsumed H is sufficient to maintain the rate of formation of I at a level sufficient to assure the accumulation of I to $[I]_c$. It is suggested that the oscillation of $[I]$ about $[I]_c$ during the

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HUNGARY/Physical Chemistry - Kinetics. Combustion. B-9
Explosions. Topochemistry. Catalysis

Abs Jour: Referat Zhur - Khim, No. 9, 1959, 30507

periodic appearance and disappearance of CF is so small that it cannot be detected with existing methods for the determination of $\angle I_7$. The effect of the addition of NO₂ on the CF is discussed on the basis of data obtained with C₂H₆ at 460°. For Communication VIII see RZhKhim, 1958, 80699. -- G. Korolev

Card 5/5

Distr: 483d/484j/482c(j)

On the Kinetics of the Oxidation of Hydrocarbons, VIII. Remarks of the Induction Period And On the Existence of Steps in Oxidation Processes.--D. Gál and Z. G. Szabó (Institute for Inorganic and Analytical Chemistry, University of Szeged)

Received March 16, 1956
Acta Chimica-Academiae Scientiarum Hungaricae
1958, Vol 16, Nr 1, p 13

SUMMARY

✓ 1. The suitability of definitions of duration of induction period established by various authors was proved by the use of experimental data obtained in the oxidation of ethane. The term running-up time has been introduced.

2. Applying the data of the present experiments, examples were given to present the wall effects observable under experimental conditions.

3. It has been pointed out that the experimental data of the authors confirm the existence of steps introduced by SEMENOFF. The principle experimental results are:

- bs. 1/1
a) occurrence of a side process in the induction period of the oxidation of ethane,
b) action of methylamine and nitric oxide in this side process, and
c) appearance of an "induced-degenerated cold-flame" under the action of nitric oxide. 27

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J. G. Szabó

Distr: 4E2c(j)/4E3d 7 7

Slow and cold-flame oxidation of acetaldehyde and effect of ethane on this oxidation: D. Gal, I. Galiba, and Z. C. Szabo (Univ. Szeged), *Acta Chem. Acad. Sci. Hung.* 10, 39-46 (1958) (in English).—At a given temp. and pressure a sharp transition between the slow oxidation of AcH and the cold-flame oxidation is observed. Both oxidations are inhibited by the presence of ethane. The inhibition manifests itself by an initial decrease in pressure followed by an increase. The time required to reach the min. increases directly with the ethane pressure. In the presence of ethane higher total pressures are needed to reach the cold-flame region. Analysis of the observed pressure changes points to a reaction zone intermediate between the slow oxidation and the cold-flame region. The results support an earlier hypothesis about the mechanism of cold flames (cf. preceding abstr.).
George A. Hall, Jr.

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Distr: 4E3d/4E3c

Kinetics of isotopic exchange reactions of alkyl iodides.
D. Gál and F. Dutka (Agrochem. Research Inst., Buda-
pest, Hung.). *Naturwissenschaften* 45, 103(1958)(in Eng-
lish).—Preliminary note. The kinetics of the isotopic ex-
change was measured between EtI, BuI, and Pri and KI
labeled with ^{131}I . The presence of aniline inhibited the ex-
change process. The rate consts. and energies of activa-
tion were: EtI 46.7×10^4 l./mol. sec., 0 cal./mole; Pri
25.7, 301; BuI 14.6, 757. F. Schossberger

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GAL, D.

V Study of organic reactivity by radioactive isotopes.
 Deaso Gál, Ferenc Dutka, László Guczi, Imre Kende, and
 László Koch. *Magyar Kém. Folyóirat* 64, 191-6 (1968).
 Isotope exchange reactions between I^{131} labeled KI and RI,
 Pr, Bu, phenethyl, 3-phenylpropyl, and 4-phenylbutyl io-
 dides were followed by detn. of the sp. activity of the org.
 iodide. Concns. of org. iodide were 0.2 mole/l. and of
 KI, 0.105 mole/l., in abs. alc. soln. The addn. of aniline
 to the mixt. inhibited isotope exchange; this was attributed
 to reaction with the org. radical resulting in splitting of the
 iodine atom from the structure. Desorption of the org. io-
 dides from red P and active C was studied with a differential
 manometer and a counter. Graphs of the data showed that
 there was a const. value of activation energy for a given sur-
 face at a given temp. On the surface of red P there were at
 least 3 adsorption zones of different heats of adsorption. At
 the highest energy-level, there was rupture of the C—I bond,
 the liberated iodine atom forming P iodides with the adsorb-
 ent. At an intermediate energy-level, the C—I rupture
 still occurred with the iodine atom moving to the lowest
 energy level, at which the C—I bond remained stable and an
 alkyl iodide polymer formed and inhibited sp. activity of the
 adsorbent. Desorption from active C also started from
 zones of min. adsorption heat but sp. activities fluctuated
 considerably and desorption was reversible. An abs. alc.
 soln. of the org. iodides was shaken with a known amt. of
 active C for a few days until adsorption equil. was attained,
 the adsorbent filtered off and mixed with alc. soln. of KI,
 measuring the increase of I^{131} activity of the soln. The
 extent of isotope exchange between org. iodides adsorbed on
 C and KI was the same. With red P, however, no exchange
 was observed. Chem. reaction took place during adsorp-
 tion on red P. Relevant kinetic data were tabulated and
 shown graphically. J. S. Goss

GAL, D.

Distr: 4E2c(j)

Kinetics of styrene oxidation in the presence of labeled benzaldehyde. F. Dutka and D. Gál (Hungarian Acad. Sci., Budapest). *Alompraxis* 5, 445 (1959) (in English).—The mechanism of styrene oxidn. by O at 70° and 760 mm. Hg was investigated. The role of BzH, the main intermediate, was examd. using a kinetic isotope method, by adding C¹⁴-labeled BzH to the system. The rate of formation of BzH was much larger than that of its further oxidn. Addn. of pyridine increased the amt. of BzH produced.

R. S. Kahan

zlw

3-22(10)

GAL, D.

Distr: 4E3d

Investigation of the interaction of alkyl iodide vapors with a carbon surface by kinetic and isotopic methods. I. Kende, L. Guzi, and D. Gál (Hungarian Acad. Sci., Budapest). *Phys. and Chem. Solids* 10, 321-5(1959).

The rate of desorption of EtI , PrI , and BuI adsorbed by active C and examd. at various temps. From the desorption curves obtained, the kinetic equation of desorption, the activation energies of desorption, and the corresponding energy distribution were detd.

J. M. Horig-

4-5 JAN (N.W.)

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17 4

Use of the differential isotope method for studying the interaction between vapors of alkyl iodide and surface of red phosphorus. L. Guczi, I. Kende, and D. Gál (Hungarian Acad. Sci., Budapest). *Phys. and Chem. Solids* 10, 326-32(1959).—The effect of increasing the no. of C atoms in alkyl iodides in the catalytic processes occurring on red P was investigated. The rates of desorption, energy distribution, and related quantities were detd. With I^{131} , the differential isotope method was used to det. the type of interaction between the adsorbent and P. Chemisorption resulting in splitting off of I atoms occurs. J. M. Honig

GAL, D. and others

Use of radioactive isotopes in the investigation of some oxidation reaction machanisms. L. Gas-phase reactions. P. 249.

MAGYAR KEMIAI FOLYOIRAT. (Magyar Kemikusok Egyesulete)
Budapest, Hungary, Vol. 65, no. 7, July 1959

Monthly List of East European Accessions, (EEAI) IC, Vol. 9. no.1
Jan. 1960 Uncl.

GAL, D.

Isotopic data to study the formation of Na_2S in oxidation of mercaptoacetic acid. L. Guzzi and D. Gal (Hungarian Acad. Sci., Budapest). *Z. Physik. Chem.* (Leipzig) 212, 235-7 (1959) (in English).—The oxidn. of $\text{HSCH}_2\text{CO}_2\text{H}$ in liquid phase at 50° and pH 8 was studied in the presence of complexon IV and of Fe with regard to the formation of sulfide and its further oxidn., employing Na_2S labeled with S^{35} . The oxidn. reaction is a branching chain reaction, 1 of its chief chains being formed by the formation of Na_2S and its further oxidn. Friedrich Epstein

GAL, D

7
 The use of radioactive isotopes for studying the mechanism of some oxidation processes. II. Dezso Gál, Ferenc Dutka, László Guzzi, and Imre Kende (Magyar Tudományos Akad. Tájéztató és Agrokémiai Kutató Intézete, Budapest, Hung.). *Magyar Kém. Folyóirat* 63, 294-8 (1959); cf. *C.A.* 54, 8525g.—The mechanism of oxidn. of styrene (I) and of mercaptoacetic acid (II) was investigated. The kinetic isotopic method was applied in both cases. Use of isotopic-labeled BzH showed that during the oxidn. of I by O (at 70°, in the absence of light) the accumulation of BzH is considerable but the further oxidn. of BzH is negligible. An early intermediate oxidn. product probably is the inhibitor. The formation of BzH is strongly catalyzed and the further oxidn. inhibited by pyridine. The 1st action is the stronger one. The oxidn. of II was studied at 60°, pH 8, in solns. contg. 0.1887M II and 0.001M Complexon IV for the elimination of heavy metal salts. The rate of the sulfide formation increases parallel to the increase in the rate of O uptake. As the process is strongly catalyzed by sulfide (contg. S²⁻), the rate-detg. step of the O uptake probably is the sulfide formation. Presumably the oxidn. proceeds to thiosulfate. The oxidn. of sulfide is of 1st order.

R. Kasztreiner

Coa.

Box

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/ Measurement of radioactive carbon (C^{14}) with a gas counter. Ferenc Dutka, Otto Orient, and ~~Dennis Gai~~ (Isotóp Lab., Budapest, Hung.). *Magyar Kém. Folyóirat* 65, 328-9 (1959).—A method is described for the measurement of

radioactive C^{14} in a Geiger counter. The C^{14} is introduced into the counter in the form of CO_2 after liberation from $BaCO_3$. The discharge is quenched by addn. of $BtOH$ and by use of an external quenching circuit (Neher-Harper). The plateau obtained is 240 v. long and the slope is less than 0.5%. The background of the unprotected counting tube is of the order of 50 counts/min. and the memory effect is negligible. Ernest J. Breda

Am

GAL, DEZ 50.

reports to be presented at the 2nd Intl Congress on Catalysis, Paris, France, 4-9-Jul '60.

Teacher's Journal

- RENNETT, L., and HAYES, V. - "The mechanism of the decomposition of alcohols on alumina" (Section II)
- RENNETT, V. - "Study of the characteristics of powder catalysts during their formation. Ethyl acetate." (Section II)
- RENNETT, C. - "Release of radioactive inert gases from surface labeled platinum during catalytic and surface reactions" (Section II)
- RENNETT, V., and JAHN, V. - "The influence of aluminum metal additives on the activity of aluminum metal catalysts in the catalytic oxidation of sulfur dioxide" (Section II)
- RENNETT, C., and DAVIS, V. - Investigating a new method of the formation of catalysts" (Section II)
- RENNETT, K. - "Contribution on the mechanism of chemisorption of carbon monoxide and carbon dioxide on nickel oxide." (Section II)
- RENNETT, V., and DAVIS, V. - "Contribution to the clarification of reasons for catalytic activity on Ni-Fe mixed catalytic agents" (Section II)
- RENNETT, V. - "Thermal decomposition of some compounds" (Section II)
- RENNETT, V., and KIRK, Z. - "Adsorption on evaporated metal films" (Section II)
- RENNETT, M. - "Magnetic investigations of nickel blank catalysts" (Section II)
- RENNETT, S., ELIOT, P., de JONCK, J. - "The oxidation of anhydrous sulfur in a fluidized bed of ferric oxide" (Section III)
- RENNETT, J., and DAVIS, V. - "The effect of nickel, iron, and cobalt, and of various oxidizing agents on the catalytic activity of nickel oxide" (Section II)
- RENNETT, S., and KIRK, Z. - "Influence of the defect structure of evaporator on the activity of catalyst" (Section II)
- RENNETT, S., and KIRK, Z. - "Mechanism of the influencing of nitric oxide in the thermal decomposition of propionic aldehyde" (Section I or II)

1

GAL, D

28. A study of the interaction between vapours of alkyl iodides and carbon surfaces by kinetic and ~~static~~ methods. I. Kondó L., GUOZI, D. GAL, A. Magyar Tudományok Akadémiájának Tudosingok Osszefoglalas Kozlonyei, Vol. 11, 1969, No. 1, pp. 31-38, 5 figs., 3 tabs.

The desorption of ethyl, propyl and butyl iodides absorbed on activated carbon was studied as a function of time at various temperatures. The kinetic equation of the desorption, the activation energies and the distribution functions corresponding to them were derived from the desorption diagrams. The nature of the interaction between these iodides and the surface of carbon was investigated by means of the differential isotope technique. The results of the experiments lead to the conclusion that under the experimental conditions employed the alkyl iodides are physically adsorbed on the carbon and the adsorbed molecules rearrange on the surface.

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GAL, D.

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27. Use of the differential isotope technique in studying the interaction between vapours of alkyl iodides and the surface of red phosphorus. L. GUZL, J. KONDE, D. GAL. *A Magyar Tudományos Akadémia Kémiai Tudományok Osztályának Közleményei*, Vol. 11, 1969, No. 1, pp. 20-41, 11 figs., 4 tabs.

The kinetic diagrams of desorption of ethyl, n-propyl and n-butyl iodides from the surface of red phosphorus were taken at 40, 60 and 100° C. The rate curves, distribution functions of desorption in terms of energy and activation energies of the desorption processes were calculated from the kinetic data. The differential isotope technique was applied in the study of the interaction of alkyl iodides with the surface of red phosphorus employing radioactive iodine isotope. The results of the investigation show that red phosphorus has a heterogeneous surface and adsorption processes are accompanied by chemisorption, the latter resulting in the cleavage of the C-I bonds of the alkyl iodide molecules.

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29-9 (NA)

RMP

GAL, Dezso; KENDE, Imre; DUTKA, Ferenc; GUCZI, Laszlo

Application of radioactive isotopes in the examination of the mechanism of some oxidation reactions. Pt. 1. Magyar kem folvoir 65 no. 7:249-252 J1 '59.

1. Magyar Tudomanyos Adademia Talajtani es Agrokemiai Kutato Intezete Izotop Laboratoriuma, Budapest.

GAL, Dezso; DUTKA, Ferenc; GUCZI, Laszlo; KENDE, Imre

Application of radioactive isotopes in the examination of the mechanism of some oxidation reactions. Pt. 2. Magyar kémiai folyoir 65 no. 8:294-298 Ag '59.

1. Magyar Tudományos Akadémia Talajtani és Agrokémiai Kutató Intézete Izotóp Laboratóriuma, Budapest.

DUTKA, Ferenc; ORIENT, Otto; GAL, Dezsó

Measuring radioactive carbon (C^{14}) by gas counter. Magyar kem
folyoir 65 no. 8:328-329 Ag '59.

1. Magyar Tudományos Akadémia Talatani és Agrokémiai
Kutató Intézete Izotop Laboratóriuma, Budapest.

P. GIL AND OTU RS

Use of radioactive isotopes in the investigation of some oxidation reaction mechanisms II. Liquid-phase reactions. p. 294.

MAGYAR KEMIAI FOLYOIRAT. (Magyar Kemikusok Egyesulete) Budapest, Hungary
Vol. 65, no. 8, Aug. 1960

Monthly List of East European Accession (EEAI), LC, Vol. 9, no. 2, Feb. 1960

Uncl.

GUCZI, Laszlo (Budapest); CAL, Dezső, a kémiai tudományok kandidátusa (Szeged)

Investigation of the oxidation mechanism of mercaptoacetic acid by means of ^{35}S isotop. I. The role of sulfide in oxidation. Kem tud közl MTA 14 no.4:399-409 '60. (EEAI 10:3)

1. Központi Élelmiszeripari Kutató Intézet, Radiológiai Osztály,
Budapest és Szegedi Tudományegyetem, Központi Izotóp Laboratorium.
(Mercaptoacetic acid) (Sulfur) (Radioisotopes)
(Sulfides) (Thiocarbonic acid) (Carbon dioxide)
(Glutathione) (Cysteine)

GUCZI, Laszlo (Budapest); GAL, Dezso, a kémiai tudományok kandidátusa
(Szeged)

Investigation of the oxidation mechanism of mercaptoacetic acid by
means of ^{35}S isotope. II. Catalytic effect of Fe^{3+} ions on the
oxidation. Kém. tud. közl. MTA 14 no.4:411-420 '60. (EEAI 10:3)

1. Kozponti Elelmiszeripari Kutató Intézet, Radiológiai Osztály,
Budapest és Szegedi Tudományegyetem, Kozponti Izotóp Laboratorium.
(Sulfur) (Mercaptoacetic acid) (Radioisotopes)
(Catalysts) (Iron) (Ions) (Complex compounds)
(Sulfides)

GALIBA, Ilona; LATZKOVITS, Laszlo; GAL, Dezsó

Investigation of heterogeneous isotope exchange occurring between solid and vapor-phase substances; a preliminary communication. Magy kem folyoir 67 no.7:323-324 J1 '61.

1. Szegedi Tudományegyetem Szervetlen és Analitikai Kémiai Intésete (for Galiba) 2. Szegedi Tudományegyetem Központi Izotop Laboratóriuma (for Latzkovits and Gal).

GUTSI, L. [Quezy, I.]; GAL. D.

S^{35} tracer study of the mechanism of oxidation of mercaptoacetic acid. Part 1. Zhur. fiz. khim. 36 no.6:1150-1157 Je'62
(MIRA 17:7)

1. Tsentral'nyy nauchno-issledovatel'skiy institut pishchevoy promyshlennosti, Vengriya i Universitet v Segede, Vengriya.

ACS, Gabor; SIROKMAN, Ferenc; GAL, Dezso

Examination of competitive oxidation with marked molecules; a preliminary communication. Magyar folyoir 68 no.5:229-230
My '62.

1. Szegedi Tudományegyetem Központi Izotop Laboratóriuma.

L 1184-66 EFF(c) RM

ACCESSION NR: AT5025196

HU/2502/64/042/004/0339/0341

AUTHOR: Szabo, Zoltan G. (Professor, Doctor)(Szeged); Galiba, Ilona (Szeged);
Gal, Dezso (Doctor)(Szeged)

TITLE: A moving-wall system for the study of the wall effect in the oxidation of hydrocarbons

SOURCE: Academia scientiarum hungaricae. Acta chimica, v. 42, no. 4, 1964, 339-341

TOPIC TAGS: oxidation, hydrocarbon, chemical laboratory apparatus

ABSTRACT: Preliminary experiments to establish the suitability of a novel moving-wall apparatus for the investigation of the wall effect in the oxidation of hydrocarbons were reported on. The apparatus consists of a flow-reaction system with a movable large-specific-surface wall inside. Tests on the oxidation of heptane gas indicated that the apparatus may be suitable for the intended purpose. Orig. art. has: 2 figures.

ASSOCIATION: Institute of Inorganic and Analytical Chemistry and Central Isotope Laboratory of A. Jozsef University, Szeged

SUBMITTED: 07Aug64

ENCL: 00

SUB CODE: OC, GC

NR REF SOV: 001

OTHER: 003

JPRS

Card 1/1

SZABO, Zoltan; GALIBA, Ilona; GAL, Dezso

Moving wall system for testing wall effect in the oxidation of hydrocarbons; a preliminary communication. Magyar nyelv és irodalom 71 no.1:45-46 Ja '65.

1. Chair of Inorganic and Analytic Chemistry of the Attila Jozsef University, Szeged, and Research Group of Reaction Kinetics of the Hungarian Academy of Sciences.

L 417/4-60 EWT(j) RM
ACC NR: AP6031682

SOURCE CODE: HU/0005/65/071/010/0432/0436

AUTHOR: Galiba, Ilona; Latzkovits, Laszlo—Latskovich, L.; Gal, Dezso 29
B

ORG: [Baliba] Institute for Inorganic and Analytical Chemistry, Jozef Attila Scientific University, Szeged (Jozsef Attila Tudományegyetem, Szervetlen- és Analitikai-Kémiai Intézet); [Latzkovits; Gal] Central Isotope Laboratory, Jozsef Attila Scientific University, Szeged (Jozsef Attila Tudományegyetem, Központi Izotop Laboratorium)

TITLE: Data on the kinetics and mechanism of heterogeneous isotope exchange reactions occurring on the surface of solid catalysts. Part 2: Study of the process occurring at the vapor-solid phase boundary 7

SOURCE: Magyar kémiai folyóirat, v. 71, no. 10, 1965, 432-436

TOPIC TAGS: exchange reaction, isotope, heterogeneous catalysis

ABSTRACT: The process occurring at the boundary of iodine crystals and methyl iodide vapor was investigated, the system being employed in the catalyzed oxidation of hydrocarbons. The kinetics of the isotope exchange process had two stages, characterized by adsorption and exchange proper, respectively; the parameters of the two processes varied by the parameters of the catalyzed reaction. A hypothesis was presented to characterize the mechanism of the processes. Orig. art. has: 5 figures and 4 tables. [JPRS: 33,540] 7

SUB CODE: 07 / SUBM DATE: 18Mar65 / ORIG REF: 001 / SOV REF: 004
OTH REF: 006

Card 1/1

2979 0080

GAL, E.

Experiences on a trip in Czechoslovakia to study ready-made shoes,
p. 59, BOR- ES CIPOTECHNIKA, (Boripari Tudományos Egyesület mint
a Magyar Tudományos Egyesületek Szövetsége Tagegyesülete) Buda-
pest, Vol. 5, No. 3, June 1955

SOURCE: East European Accessions List (EEAL) Library of Congress,
Vol. 4, No. 12, December 1954

GAL,

Five years of the Enterprise for Realizing Innovations. p. 13

MUSZAKI ELFT. (Muszaki es Termeszettudomanyos Egyesuletok Szovetsége) Budapest

No. 13, July 1955

SO: Monthly list of East European Accessions, (EEAL), Vol 4 No. 11 Nov. 1955 Uncl.

GAL, E.

Fuel "Abstracts
Vol. 14 No. 4
October 1953
Natural Solid Fuels:
Sources and Properties

3910. ASH COMPOSITION AND FUSION BEHAVIOUR OF BELGIAN COALS: METHOD FOR OVERCOMING DIAGNOSTIC DIFFICULTIES. GAL, E. (Acta Tech. Acad. Sci. Hung., 1952, vol. 5, 1-19; abstr. in Chem. Abstr., 1953, vol. 47, 2957, 2958). Ash compounds are given for Delnograd and Harica brown coals, and Bunte-Baum fusion curves are given for their ashes. The Delnograd brown coal ash begins to soften at temperatures below 900° but has a more pronounced softening point at 1044°, and becomes fluid at 1273°, while the Harica brown coal ash softens at 1041°, rather sharply, and has a flow point of 1081°. The former coal gives a "long" slag that forms a glassy clinker that is difficult to handle, while the latter coal gives a "short" slag, producing a clinker that is brittle and easy to handle. The ash of the Delnograd coal has a high silica content and low lime content, while that from the Harica coal has a lower silica content and much higher lime content. A mixture of the two coals (1/5 Harica) can be fired without clinkering difficulties; the same result can be secured by adding sufficient lime to the Delnograd coal. Other coals show the same behaviour. Bunte-Baum curves are given for Delnograd coal ash with the addition of 2-10% lime; all of these additions reduced the softening interval and eliminated (gave a shorter slag) clinkering difficulties. Tribes coal was separated into screen sizes running from 0-5 mm up to 80 mm, and each of these sizes was separated into density groups generally running from 1.4 to 1.7. In each case the silica content increased with density increase, while the lime content fell. The fractions of low density gave a "short" slag, and those of highest density a "long" slag, while a mixture of densities as in the original coal gave a curve of somewhat intermediate type, corresponding to a "long" slag and troublesome clinkering. The ash was considered to be non-homogeneous. It is pointed out that two coals of the same density may have very different ash contents, as the lighter ash constituents may be present in a much greater percentage in one such sample than another which has heavier ash constituents, but the same coal density. C.A.

GAL, E.

✓ 5278. COAL TYPES OF HECSEK MOUNTAINS AND THEIR CLASSIFICATION. GAL, E.
Jakov, L. and Fekdas, P. (Heg. All. Paleontol. Inst., Ev. (Hung. Nat. Geol. Mus.
Ann.), 1956, vol. 43, 297-306; title in Chem. Abstr., 1957, vol. 54, D321)

GAL, E.

HUNGARY/Cosmochemistry, Geochemistry, Hydrochemistry

D

Abs Jour : Ref Zhur - Khimiya, No 3, 1958, No 7459

Author : E. Gal

Inst : Not Given

Title : Chemical and Analytical Study of Coals to the Purpose of
Classification of Coal Strata

Orig Pub : Banyash lapok, 1957, 12, No 3, 179-190

Abstract : No abstract

Card : 1/1

GAL, Endre; WEITZNER, Peter

Experiences with the industry of leather ready-made goods in
the German Democratic Republic. Bor cipo ll no.1:23-24 Ja '61.

1. Rakospalotai Bor- es Muanyagfeldolgozo Vallalat.

GAL, Erno, chemical engineer; KOVATSITS, Katalin, chemical engineer

New methods for investigating the mineral content of Hungary's
coals. Izvestia Bany KI no.3/4:53-57 '59/60.

GAL, Erno (Budapest)

Investigations of the research Institute for Mining in coal chemistry and coal analysis. Kem tud kozl MTA 16 no.1:11-18 '61.

1. Banyaszati Kutato Intezet, Budapest.

(Hungary—Mining research) (Coal)

GAL, Erno, dr., Dipl. Chemie-Ingenieur, Kandidat der chem. Wissenschaften

Coal chemical and coal analytic research at the Research Institute of Mining. Izvestia Bany KI no.5:195-199 '61.

GAL, Erner [Gal, Erno], dr., inzh. khimik, kand.khim.nauk; SAVA, Yozsef [Szava, Jozsef], dr., inzh.khimik, kand.khim.nauk

Determination of the combustible volatile substances in Hungarian coals. Izvestia Bany KI no.5:200-205 '61.

GAL, Erno, dr., Chem.eng., Cand. of ch.sc.; KORBULY, Judit, Chem.eng.

Determination of the swelling index of coking coal in electric furnaces. Izvestia Bany KI no.5:206-210 '61.

GAL, F.

"Measurement of Actual Values of Synchronous Reactances." p. 67. Ljubljana, Vol. 22, no. 3/4, 1954.

SO: East European Accessions List, Vol. 3, no. 9, September 1954, Lib. of Congress

(-112, 1-1)
VANDRA, E.; GAL, F.

Isolation of phages active against Mycobacteria. Acta microb. hung. 5 no.1:
43-48 1958..

1..The Diagnostic Laboratory of the National Institute for Tuberculosis
"Kordnyi" Budapest.

(MYCOBACTERIUM

phages, isolation from soil)

(BACTERIOPHAGE

of Mycobacterium strains, isolation from soil)

GAL, Franc, inz. (Bistrica pri Mariboru 51)

Advantages of diesel-electric traction. Tehnika Jug 18 no.6:
Suppl.:Elektrotehnika 12 no.6:1112-1114 Ja '63.

1. Tehn. direktor Tovarne termoelektričnih proizvodov,
Bistrica pri Mariboru.

NEMETH, L.; GAL, F.

Growth of three mouse ascites tumours in nine different strains.
Neoplasma (Bratisl.) 11 no.3:241-243 '64

1. Research Institute of Oncopathology, Budapest, Hungary.

NEMETH, L.; DOBROSSY, L.; GAL, F.; NEMETH, L., Jr.

Effect of vinblastine-sulphate (VR-8) on Vx-2 rabbit carcinoma.
Neoplasma (Bratisl.) 12 no.4:357-363 '65.

1. Research Institute of Oncopathology, Budapest, Hungary.

GAL, GY. EXCERPTA MEDICA Sec 7 Vol. 12/8 Pediatrics Aug 58

2185. THE PATHOLOGY OF HEPATITIS IN INFANCY - Beiträge zur Pathologie der Hepatitis im Säuglingsalter - Gál Gy. Pathol. Abt., István-Krankenh., Budapest - ACTA MORPH. ACAD. SCIENT. HUNG. (Budapest) 1957, 7/4 (423-435) Illus. 6

The findings in 20 autopsies of children (19 between 11 days and 15 months old, one 4 yr. old) who all died of hepatitis, are discussed. In 18 of them icterus was present. In 18 the clinical diagnosis was: acute yellow liver atrophy. None of the mothers had shown signs of hepatitis during pregnancy. In one case the mother had hepatitis one month before her child fell ill. Histopathologically 3 groups were present: (1) Eleven cases; mean time of illness 5 days; weight of the liver normal or slightly decreased; severe damage of the liver parenchyma, without signs of regeneration or increase of connective tissue. (2) Seven cases; mean time of illness 9 days; weight of the liver normal or increased; moderate damage of the liver parenchyma; significant increase of connective tissue with proliferation of bile ducts (transition between acute atrophy and cirrhosis). (3) Two cases; both 9 days ill; liver decreased in size; one showed the type of Laennec cirrhosis, the other diffuse increase of the connective tissue. The author points to the resemblance with the picture in adults. The giant cells which may be seen are considered to be products of degeneration. The clinical pictures in the 3 groups show little differences. Of the groups (2) and (3) it is assumed that the hepatic process lasted much longer than the clinical signs made believe. A latent hepatitis or chronic hepatitis with acute exacerbation should then be present. The possibility that blood group antagonism may be the cause of cirrhosis is discussed. Syphilitic origin should be excluded. No indication of toxic origin of the liver damage was present.

Lankester - Heerlen (V, 1, 7)

ALTORJAY, Istvan, Dr.; GAL, Gyorgy, Dr.

Extensive resection of the small intestine. Magy. sebeszet 11 no.2:
147-150 Apr-June 58.

1. A Szegedi Orvostudományi Egyetem I. sz. Sebészeti Klinikájának
közleménye Igazgató: Jaki Gyula dr. egyetemi tanár.
(INTESTINE, SMALL, surg.
massive resection (Hun))

GAL, Gyorgy, Dr.

Development of the medical care of industrial workers in the Soviet Union. Nepegeszsegugy 39 no.1-2:10-15 Jan-Feb 58.

(INDUSTRIAL HYGIENE

med. care of workers in Russia, progr. (Hun))

GAL, Gyorgy, dr.; NEMETH, Andras, dr.

10 cases of renal complications following blood transfusion.
Orv.hetil. 101 no.1:13-18 Ja '60.

1. Szegedi Orvostudományi Egyetem, I. sz. Sebészeti klinika.
(BLOOD TRANSFUSION compl.)
(BLOOD GROUPS)
(KIDNEY DISEASES etiol)

GAL, György, dr. ; ANDRAS, Nándor, dr.

A Hungarian-made "artificial kidney- which can be connected with the circulatory system. Orv. hetil. 101 no.22:765-769 29 My '60.

1.Szegedi Orvostudományi Egyetem, I. sz. Sebészeti Klinika.
(KIDNEY ARTIFICIAL)